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FISHERMAN LOG NEWSLETTER

ANNUAL EDITION
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Publication of: *Montana Department of Fish, Wildlife & Parks*

PLEASE RETURN

"FISHIN' N' FLOATIN' THE BLUE RIBBON MADISON RIVER"

MONTANA REGIONAL UPDATES

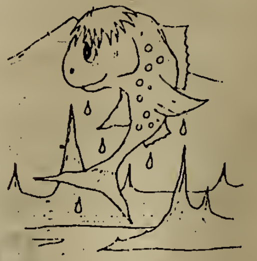
KALISPELL AREA

Eighteen months of work by state and tribal biologists and hundreds of responses by fishermen finally came together when the final fisheries management plan for the Upper Flathead River and Lake System was approved. The plan was written to respond to the collapse of the kokanee fishery, from the cumulative affects of dam operation, predation, overfishing, and Mysis shrimp competition. The plan also sets mutual fish management goals for FWP and the Confederated Salish and Kootenai Tribe which controls the south half of Flathead Lake and sets direction for fish mitigation programs for Kerr and Hungry Horse dams. The plan calls for increased emphasis on native species with plants of cutthroat and bull trout to replace fish lost when Hungry Horse and Bigfork dams were built. The plan also calls for an experimental kokanee stocking program to see if the salmon fishery can be restored. The stocking effort will be greatly helped by 4.7 million kokanee eggs collected by spawn-taking crews this fall. Short-term plans call for increased publicity on fishing for small lake trout and Lake Superior whitefish, both of which have increased in numbers recently.

FWP is currently working on mitigation plans for Flathead Lake, Lake Koocanusa, and Hungry Horse Reservoir under the Northwest Power Planning Act and dam relicensing. Hungry Horse and Koocanusa have been particularly hard hit by the drought of the last few years, resulting in drawdowns of 140-170 feet. Pilot projects have been started to plant adult and fingerling cutthroat in Hungry Horse Reservoir and tributaries and to improve fish habitat in Mill Creek, a spring creek tributary to the Flathead River.

Kamloop rainbows have been introduced in Lake Koocanusa in an attempt to produce a trophy fishery and control numbers of overabundant kokanee. Other recent introductions include kamloops in Little Bitterroot Lake, brown trout in the upper Thompson River, and smallmouth bass in Noxon Rapids Reservoir. A new reservoir management plan by Washington Water Power has minimized fluctuations of Noxon Rapids and doubled growth rates of largemouth and smallmouth bass. Fishing has improved to where Noxon Rapids has been the site of the Montana B.A.S.S. Federation state tournament the last several years. Illegal transplants of fish continue to be a problem with documentation of largemouth bass, yellow perch, northern pike, channel catfish, and pumpkinseed transplants in the past year. FWP has now documented 51 successful but illegal transplants of northern pike in Region 1 alone. This practice damages existing fisheries and raises management costs by requiring more stocking and chemical rehabilitation.

Region 1 also supports about 70 percent of the timber harvest in the state. Studies have shown that bull trout egg survival is greatly reduced by the presence of silt and sand in spawning gravels. For example, there is about 70 percent survival with 30 percent fines but only about 20 percent survival with 40 percent fines. FWP biologists are currently working with the U.S. Forest Service, Mt. State Lands, University of Montana, Plum Creek Timberlands, and the Flathead Basin Commission to define the relationship between logging and fine sediment in stream gravels and to evaluate the effectiveness of Best Management Practices (BMP's) in reducing sediment production.



graphics Dave McGee

MISSOULA AREA

Big changes in fishing regulations are coming for the Blackfoot River and its tributary streams (except the Clearwater River). Rainbow and brown trout limits have been cut to 3 fish, none of which can be longer than 12 inches in length. Cutthroat and bull trout are catch-and-release only. The new limits apply to the general fishing season, which starts the third Saturday in May and continues through November. The winter fishing seasons remain the same as before: catch-and-release only on all trout in waters open to whitefishing. If you have problems identifying the different fish species, the new 1990-92 fishing booklet of regulations will contain a color plate comparing the trout species. In addition, we have a fish identification slide presentation that can be given to your group at your request.

The change in regulations results from a fishery study that indicated extremely low populations of trout. Both natural and man-caused habitat deterioration coupled with naturally slow growth rates and excessive harvest appear to be the culprits. The information we have further indicates that, even with restrictive limits, the recovery of this fishery may be slow. The most rapid response should be noticed in the river below Belmont Creek where the size of rainbow trout caught is expected to increase significantly in the next few years. However, the extremely low numbers of trout in the river above Belmont Creek are probably going to show only modest growth improvements in the short-term because of suspected habitat-related problems.

We have begun efforts to improve fish habitat within the drainage with cooperation of the BLM, USFS, Blackfoot Chapter of Trout Unlimited, and private landowners. In 1989 we identified some significant problem areas and some potential opportunities for habitat improvement work. Some habitat improvement projects are already in the works.

In areas of the Blackfoot drainage where the fishery was so depleted that recovery may be slow or doubtful, limited fish planting of wild cutthroat trout has begun. This effort is intended to boost natural reproduction and will cease once the fish populations have recovered.

The two native trout species in the Blackfoot River, the bull trout and the cutthroat trout, are also receiving some much overdue attention. Both species occur in densities greatly reduced from potential and past levels. The extremely low densities and downward trend in spawning success warrants the extreme measure of imposing catch-and-release only fishing on these species. Their reliance upon tributary spawning and rearing required inclusion of the tributaries in the restrictive regulation changes.

We are striving for a much improved Blackfoot River fishery in the future and welcome your participation in that effort.

Native cutthroat trout in the Bitterroot River and the West Fork of the Bitterroot River below Painted Rocks Reservoir must be released under recently adopted fishing regulations for the 1990-91 fishing season.

In 1989, cutthroat trout comprised a mere 1 to 8 percent of the total trout population in the Bitterroot River. The high vulnerability of cutthroat to harvest is suspected to have caused the low densities; densities far below levels recalled by long-term anglers of the Bitterroot River. Your cooperation in helping this native Montanan is needed.

The emergency drought limits have been removed from all Region 2 streams. Check your fishing regulations for the seasons and limits that will be in effect in the areas you fish.

BOZEMAN AREA

During 1989, a fisheries management plan was completed for the Big Hole River. The plan had been developed over the past year by the Bozeman Area fisheries personnel, who have worked closely with an Advisory Committee made up of sportsmen's groups, landowners, and federal, state and county agencies. The draft plan was made available for public review in early August, with public meetings being held in Butte and Dillon. Written comments were also requested before the final draft was written and finally approved by the Fish and Game Commission in November, 1989.

The major element of the plan deals with the management of the Big Hole's outstanding trout fishery. Of particular note is the strong public support for the special regulation area from Divide to Melrose which includes a "slot limit" that requires the release of all fish between 13 and 22 inches. The daily catch limit for this area is 3 fish under 13 inches and 1 fish over 22 inches, with fishing gear being restricted to artificial lures and flies. The Department's fisheries population data demonstrate that the goal of providing an abundance of large trout is being achieved. The plan purposes to continue of the special regulations for this area.

A second special regulation area exists from Dickie Bridge downstream to Divide. It has the same catch and gear restrictions as described above and was put in place by the Fish and Game Commission at the urging of sportsmen 2 years ago. However, there is a segment of the public which does not support the special regulations for this area. The plan proposes maintaining the special regulations for another 2 year regulation setting period, which will allow the Department to complete it's evaluation of the effects of the regulations on the trout populations. At that time, the results of the evaluation will be presented to the public and consideration will be given to making changes in the regulations if warranted.

Another important fisheries management area is the river above Dickie Bridge which contains the last native stream dwelling population of grayling in the lower 48 states. The plan places the highest priority on preserving, protecting and enhancing this grayling population. High harvest rates for brook trout will continue and the hatchery plant of rainbows at Sportsmen's Park will be discontinued to reduce competition with the grayling. The Department will also continue it's research program to improve it's understanding of the needs of the grayling and allow an evaluation of future management of this section of the Big Hole.

Another important goal of the Management Plan is protection and enhancement of the fisheries habitat. Foremost is the need to increase summer and fall water flows in the river. The plan proposes to work toward increased flows by encouraging conservation of water by irrigators, exploring the feasibility of water leasing and further analyzing the feasibility of offstream or tributary storage.

The plan proposes to gain a better understanding of angler use by means of an angler census during the summer of 1991 or 1992. It also proposes the joint development of a river users guide with the Bureau of Land Management who manages a significant amount of public lands which front the Big Hole. The Department will also work closely with the Bureau in efforts to consolidate public ownership of the river corridor and to insure that land use activities within the corridor are compatible with the recreation use of the river.

Unlucky fishing holes

GREAT FALLS AREA

(Northcentral Montana)

MISSOURI RESERVOIRS

A major fisheries research project has been underway since 1986 on three Missouri River reservoirs (Canyon Ferry, Hauser and Holter) between Helena and Great Falls. The primary objective of the study is to determine the influence of reservoir spills on fish populations (primarily stocked rainbow trout) during high water years. The study is also tracking kokanee salmon and walleye populations in Hauser and Holter as well as the performance of several different strains of rainbow trout. A major part of the project involves marking all of the approximately one million hatchery rainbow trout (usually 3 to 5 inch fish) that are planted annually in the three reservoirs. Most fish are sprayed with one of three fluorescent pigment colors (visible only using a "black light") while some are marked with fin clips. Losses of hatchery trout over or through the dams in these recent low water years have been relatively small, as determined by gill net surveys, electrofishing surveys and checks of angler creels. Creel surveys have shown greatest return of stocked rainbows to the anglers' creels in Holter Reservoir, where about 30% of stocked fish are harvested. About 22% of Hauser rainbows are harvested compared to 9% for Canyon Ferry. The fish marking program has also shown that Holter has a higher percentage of naturally reproduced "wild" rainbow (about 17% of lake population) than does Hauser (9%) or Canyon Ferry (2%). Rainbow trout catch rates vary substantially between months for Holter anglers but have been remarkably consistent from year to year. The average catch rate for Holter rainbows has ranged between .30 and .37 fish per hour for summers 1986 through 1989. This may sound low but it is actually a fairly good rate when compared to other trout reservoirs in the state. Kokanee salmon catch rates for Hauser Reservoir have steadily increased from .10 per hour in 1986 to .42 per hour in 1989, paralleling a steady population increase in the past several years. Summertime rainbow catches have declined in Hauser but they remain an important sport fish in other seasons of the year.

MANAGEMENT PLANS

Fisheries management plans to guide Department efforts for the next five years on the Missouri River (Holter to Great Falls) and for Hauser Reservoir are in the final stages of completion. Major provisions of the Missouri River plan include a restrictive limit on brown trout (one fish, must exceed 22 inches) to enhance numbers of trophy fish, and regulation changes or closures to protect spawning trout in Little Prickly Pear Creek and the Dearborn River. River rainbow populations are reasonably stable and will require more investigation to determine whether or not fishing regulation changes can be used to improve fishing. Other recommended actions include removal of barriers to spawning migrations, investigation of water leasing to prevent irrigation dewatering of key spawning streams, encouraging preservation of riverside lands, using education to reduce conflicts among angler groups, and evaluating the potential for enhancing cool water species such as smallmouth bass in the lower river (Ulm to Great Falls).

The Hauser management plan recommends continued management for a mixed rainbow/kokanee fishery with an annual harvest of around 80,000 fish. Attempts will be made to maintain average kokanee size of 14 inches. A number of measures including increased creel limits, collection of eggs and stocking of predators such as "kamloops" rainbow would be considered if kokanee overpopulation occurs. Numbers of rainbow stocked will be reduced in years of high kokanee abundance. Other provisions include limited experimental stocking of walleye fingerlings in the Causeway Arm of the reservoir and continuing efforts to establish a bass fishery in Lake Helena. The objective of the walleye plants is to raise the existing sparse population up to fishable levels without significantly impacting other sportfish populations. Please contact the Great Falls office if you'd like a copy of either plan; they will be available soon.

OTHER PROJECTS

A special one-year creel survey is currently underway on Lake Frances, a popular walleye and northern pike fishing lake 80 miles northwest of Great Falls. The purpose of the study is to determine the number and size of fish harvested and if harvest rates are compatible with fish populations. The study will help evaluate the effectiveness of current fishing regulations for managing walleye and northern pike in Lake Frances.

Prospects for developing a new walleye/perch fishery in Bynum Reservoir (north of Choteau) improved with the abundant rainfall received in central Montana this summer. Water levels were critically low last winter and in spring 1989 and biologists were afraid that developing fish populations would be threatened. Fortunately, walleyes and forage species (yellow perch and spottail shiners) planted beginning in 1985 made it through the drought. It will be several years before the fishery fully develops but initial results are promising. Recurring low water levels due to heavy irrigation use will probably be a problem from time to time in the future. Biologists are not sure whether walleye will reproduce naturally there and are hoping that uninformed angler(s) do not illegally introduce northern pike as has occurred in so many other waters. Northerns would use the same food as walleye in this lake and thus reduce the amount of forage available to walleye. This reservoir had been planted with rainbow trout annually prior to converting to a walleye fishery.

Attempts to develop largemouth bass fishing opportunities in several regional ponds have been bolstered by increased bass fingerling production at the renovated warm water hatchery in Miles City. Several ponds in the Lewistown/Winnett area have been planted. These include: Holland, Hopalong, Dry Blood, Drag and South Fork Dry Blood reservoirs. A few ponds in the Fort Benton and Choteau areas have either already received largemouth bass plants or should be planted next year. If smallmouth fingerlings become available, they will be stocked in the Morony dam area on the Missouri River and in the lower Marias River.

BILLINGS AREA

BIGHORN RIVER

The Bighorn River again provided excellent fishing in 1989. In fact, the great fishing and continued publicity in national magazines attracted record numbers of anglers to the Bighorn this year. Low flow releases concentrated these anglers into a smaller area of fishable water, resulting in dense concentrations of boats and anglers on the upper twelve miles of river, especially during September and October.

Recent drought conditions have been a mixed blessing for the Bighorn fishery. Low discharge levels and the resulting colder water temperatures have taken their toll on recruitment of young rainbow and brown trout in the upper river. As a result, total trout numbers are down from recent highs. On the bright side, the reduced competition from the smaller fish has resulted in improved condition and better survival in the older age classes of trout. The average size of both rainbow and brown trout caught this year was about 16 inches with many trout over 18 inches being caught. All anglers seemed very happy with the fishery this year.

It remains to be seen if the reduced numbers of younger trout will result in an appreciable decline in the Bighorn River fishery in the next couple of years as the older trout begin to die off. Even if a decline does occur, the Bighorn River is productive enough that it should recover quickly once we get a couple of good flow years.

Efforts to establish a smallmouth bass fishery in the lower Bighorn got a good boost this year. Approximately 62,000 smallmouth were planted in the lower Bighorn River below Harden in 1986. Due to the reconstruction of the Miles City fish hatchery, no smallmouth have been available since 1986 to continue this stocking program. This spring the smallmouth brood stock at Miles City did produce, and we were able to obtain our full request of 100,000 smallmouth which were stocked at three locations in the Bighorn downstream from Hardin. Plans are to continue this stocking program for a couple more years if fish are available.

While survey shocking in the lower river this summer, we captured several smallmouth from the 1986 plant. These fish were large enough that they should spawn next spring. Hopefully, we should be well on our way to establishing a self-sustaining smallmouth bass fishery in the lower Bighorn River.

YELLOWSTONE RIVER

Trout population estimates were completed in the Big Timber section of the Yellowstone River. Numbers of small trout were down significantly while populations of larger trout were down only slightly. The primary cause for the decline in small trout is several years of extended drought.

STILLWATER RIVER

The Stillwater River Management Plan was completed following extensive public involvement. Recommended management direction is based on retaining the present drought limit of 2 trout, with only 1 over 13 inches. This option was selected to increase the number of fish over 13 inches in the Stillwater while providing some protection for spawning trout.

BOULDER RIVER

Fish sampling efforts were concentrated in the Boulder River drainage. Emphasis was placed on the Boulder to gather baseline fisheries information prior to an anticipated influx of people associated with impending mining development in the drainage. Detailed fisheries information is also needed for scheduled development of a management plan for the Boulder River Drainage. Creel census and fishing pressure information was gathered by a worker hired as part of a cooperative agreement between the Department of Fish, Wildlife and Parks and the Stillwater Mining Company.

Two-pass fish population estimates were made in three sections of the East Boulder. Cutthroat trout were collected for genetic testing from a number of Boulder River tributary streams. This work was a cooperative project with the USFS intended to determine the distribution of cutthroat within the drainage. A fish population estimate was completed in B-1 section near the mouth of the Boulder River. Fish numbers were low following several years of extensive drought.

MUSSELSHELL RIVER

The Musselshell is still suffering from severe dewatering due to recent drought conditions. After a 50% drought-related decrease in brown trout numbers between 1985 and 1986, the population appears to have stabilized at this lower level. There is still a good size range of fish available with enough large fish present to make for good fishing. Smallmouth bass and catfish fishing on the lower Musselshell has been slow this year due to low water conditions.

Bighorn Lake

Fishing has been fair to good on Bighorn Lake this year. Low water levels in the reservoir made it very difficult to get a boat into the water until late in the spring. Anglers that did get on the water found good fishing for walleye, crappie, trout and largemouth bass. Fishing slowed during the summer, but fishermen that know the reservoir seemed to catch fish all summer. Many anglers reported seeing and catching large numbers of small walleye later in the summer, which is encouraging for future walleye fishing. In the past, it has been very difficult to sample any small walleye in the reservoir.

The walleye egg-taking operation was very successful in Yellowtail this spring. Almost 11 million walleye eggs were collected and 5 million fry were planted back into the reservoir. The adult walleye collected during the egg take were very nice fish with the females averaging close to six pounds. Several fish over 11 pounds were handled.

During mid-summer sampling with the Wyoming Game and Fish Department, we found excellent crappie production in the upper half of the reservoir. The spottail shiner, planted as an additional forage species in the Wyoming end of the reservoir in 1987 and 1988, has moved down the reservoir as far as Big Bull Elk Creek.

COONEY RESERVOIR

Cooney reservoir continues to be a heavily used walleye-rainbow trout fishery. We still have found no evidence of walleye reproduction in Cooney. Walleyes have not been stocked for 2 years, but a plant is scheduled for 1990. During the fall of 1989, we netted good numbers of walleyes and rainbows. Walleyes collected were in excellent condition, but rainbows were slightly smaller than last year.

ABSAROKA-BEARTOOTH MOUNTAIN LAKES

A trailhead creel census was conducted for the second year at major entry points into the Beartooth-Absaroka Wilderness. Data from this survey is being summarized and analyzed. Fisheries surveys were conducted in 42 mountain lakes.

REGIONAL PONDS AND RESERVOIRS

Despite a serious setback in 1989, the Region 5 bass pond program is still going strong. Many of the better largemouth bass ponds suffered serious winter-kill last winter as a result of low water levels and severe winter conditions. The Miles City hatchery had a good production year for largemouth, however, and we were able to get all the bass we requested for restocking these ponds plus making initial plants in several new ponds. Hopefully, in two to three years these ponds will again be providing good bass fishing.

Sampling indicates that Deadman's Reservoir still contains good populations of both trout and kokanee salmon despite very low water levels the past couple of years. Low water levels in the spring and an early drawdown during the irrigation season made it difficult to get a boat in most of the summer and fishing pressure has been light.

Lake Elmo provided some catches of nice crappie this spring to anglers fishing over the tree reef on the south side of the lake. This lake received a large plant of largemouth bass as well as another plant of channel catfish. Several anglers reported catching small channel catfish from Lake Elmo this summer so it appears that last year's catfish plant was at least partially successful.

A second lake in the region received a small plant of tiger muskie this summer. It is hoped that the tiger muskie will help control the sucker populations in these lakes, and will eventually provide a trophy-type fishery as they begin to reach the minimum legal size of 30 inches.

GLASGOW AREA

FORT PECK RESERVOIR:

Anglers reported good walleye fishing in most areas of the reservoir with the best catches in the mid and upper Missouri River Arm.

Despite low lake elevations in the spring, approximately 33 million walleye eggs were taken in the upper Big Dry Arm. Eggs obtained from Fort Peck and elsewhere provided 32 million walleye fry and over 600,000 walleye fingerlings for stocking throughout the lake. Fall beach seining indicated that young-of-year walleye survived well and should provide a strong year-class. In the upper Missouri Arm, where walleye stocking was temporarily suspended in '89, young-of-year were also seined in significant numbers. Abundance of young-of-year walleye in this area may indicate successful natural reproduction.

The Corps of Engineers and the Department initiated a cooperative effort to construct a walleye spawning station in the upper Big Dry Arm this fall. The exterior of the building has been completed and interior plumbing should be finished next year, with the site being fully operational by spring of 1991. The start-up date is contingent on the lake elevation.

Average weight of lake trout creeled in the spring and fall of '89 was over 7 pounds. Catch rates during the creel survey indicated a significant decline from previous seasons, and may be due to inability of lake trout to "home" in on traditional spawning sites due to the severe reservoir draw down.

Production of young-of-year cisco in 1989 was down from the previous year, which was anticipated due to poor condition of adult spawners observed in the fall of 1988. The capture rate dropped from 107 fish per net in 1988 to an average of 23 per net in 1989. Examination of stomach samples from various game fish species indicates that cisco continue to be the dominant forage for most predatory fish.

Smallmouth bass continue to reproduce naturally, as determined by the abundance of young-of-year captured throughout the lake during fall beach seining. Angler interest in smallmouth bass is increasing and more are being creeled.

Large numbers of chinook salmon have been captured by anglers off the face of the dam and in the Fort Peck Marina bay since early November. Males averaging 6 to 7 pounds dominated the catch. The largest reported was 13 pounds 4 ounces which was a new state record.

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THE DROUGHT OF 1988

The large forest fires which occurred in Montana and other western states during the summer of 1988 received national media attention, particularly the fires in Yellowstone National Park. Drought conditions which began in 1985 culminated in 1988 in one of the driest years on record. Poor winter snowpack and lack of spring and summer precipitation produced dry forest conditions which were ripe for fueling natural and man-caused fires.

Receiving less publicity were the significant impacts the same lack of moisture had on water supplies in streams and lakes. In Montana, water supplies were very limited and the combination of low natural stream-flows, diversions for irrigation and reservoir released for hydro-power production significantly affected many streams and lakes during the drought of 1988. Some drought impacts on these waters and their fisheries are discussed as follows.

FLATHEAD/KOOTENAI RIVER DRAINAGES

Streams in these basins were not impacted as severely as in other parts of the state because of fewer irrigation requirements. Although streamflows were lower than normal and in some cases reached record lows, most of the drought impacts occurred in the basins' numerous lakes and reservoirs. Major impacts occurred at two of the larger federal reservoirs, Libby and Hungry Horse. Drawdowns reached 141 feet at Libby and 178 feet at Hungry Horse in April, 1988, reducing reservoir volumes by 76 and 77%, respectively.

Anglers were very successful on the reservoirs due to crowding of fish. However, the number of anglers able to use the reservoirs was reduced because of their inability to launch boats. The Corps of Engineers U.S. Forest Service and Bureau of Reclamation eventually extended some boat ramps at each reservoir.

CLARK FORK DRAINAGE

Stream flows in the upper Clark Fork (above Milltown Dam) reached record low levels. Portions of the Clark Fork above Deer Lodge were practically dry due to a combination of low runoff and heavy irrigation use. In the upper Clark Fork, in-channel sedimentation and nutrient loading intensified as a result of low flows. These factors, coupled with drought-related habitat reductions and warmer water temperatures, further stressed the already depressed trout populations in the river. In addition, summer drought conditions likely aggravated the poor recruitment that chronically plagues the river's trout fishery.

Flows in the Blackfoot River also reached record low levels. Bull trout redd counts were down 60-70% in key spawning areas of the Blackfoot drainage, very likely due to low flow conditions. Lack of adequate spring flushing flows in the last five years has resulted in above normal sediment accumulation within the stream channel that could affect the survival of incubating trout eggs, the supply of aquatic food items, and the quality of habitat. Long-term drought impacts are anticipated, although these impacts may be masked by other environmental problems, most notably toxic metals pollution originating in the headwaters.

No fish kills were reported in either the Clark Fork or Blackfoot rivers, except a fish kill in the Clark Fork headwaters which was not entirely drought related, but instead due primarily to toxic metals pollution.

UPPER MISSOURI RIVER DRAINAGE

(Above Canyon Ferry Dam)

BIG HOLE RIVER

The entire length of the Big Hole River was affected by well below normal flow which, for the first half of August, constituted the lowest flows of record (65 years) at the USGS gauge at Melrose. Reaches most severely affected were in the upper river near Wisdom where flow actually ceased for about 1/2 mile, and in the lower river from the Pennington Bridge to the mouth where flows of less than 10 cfs occurred between pools.

BIG HOLE RIVER AT WISDOM, AUGUST 1988

Two fish population study sections have been established in the Big Hole River below the town of Wise River--an upper section near Jerry Creek (dominated by rainbow trout), and a lower section (called Hog Back) near Glen (dominated by brown trout). Between 1987 and 1988, total rainbow numbers were reduced 31% in the Jerry Creek section. Brown trout numbers dropped 44% in the Hog Back section. In both sections, the most dramatic decreases were in the smaller age-groups (age 1 and 2). Age 1 rainbow decreased 56 percent in the Jerry Creek section. Age 2 brown trout decreased 78% in the Hog Back section.

Older age-classes of brown trout were not affected by low flows. However, such was not the case with rainbow trout. The larger (age 4) rainbow decreased along with the younger (age 1) fish, most likely due to the characteristics of larger rainbow habitats which tend to become dewatered more severely with flow reductions than do the habitats of larger brown trout.

JEFFERSON RIVER

The entire 84-mile length of the Jefferson River was impacted by low flows. Approximately 12 miles of stream virtually stopped flowing. The lowest instantaneous flow recorded in August at the USGS gauge near the mouth at Three Forks was only 43 cfs. The highest average daily flow was 81 cfs, well below what the river requires at that point. Water temperatures reached 82°F at some locations in the river. Several small fish kills were documented.

BEAVERHEAD RIVER

The upper 10 miles of the Beaverhead River (Clark Canyon Dam to Barretts) is used to transport irrigation water to the Bureau of Reclamation's East Bench Unit. Therefore, this part of the river suffered no flow reductions until late August - early September. The lower Beaverhead (below Barretts) suffered severe flow reductions during early summer (June-July) but began to benefit from irrigation return flows in August. Flow releases at Clark Canyon Dam were cut to 50 cfs during the fall and winter of 1988/89. Recommended releases are 200 cfs.

Initial observations during spring, 1989 electrofishing on the Beaverhead River between Clark Canyon Dam and Dillon indicate the rainbow and brown trout populations were severely reduced by the low releases (50 cfs) from Clark Canyon Dam during fall and winter of 1988/89. Rainbow comprise 15-20% of the population while brown trout comprise 80-85%.

In the upper river, rainbow appear to be at their lowest level in the last 10 years. The number of large adult rainbow actually captured while electrofishing this section has averaged about 100 fish since 1983. In 1989, only four large adult rainbow were captured. Their condition factor, which relates the weight of fish to its length, was down 15% from average. More conclusive impacts on rainbow will be available after the fall, 1989 estimates are made.

Major impacts occurred on the larger "trophy" brown trout. Brown trout 18 inches and over declined 37% and trout 20 inches and over declined 50%. Condition factors were down 14 and 16% from average, respectively.

MADISON RIVER

Despite adequate fishery flows in the lower Madison River below Ennis Reservoir, fish kills related to elevated water temperatures - a problem resulting from the solar heating of Ennis Reservoir - periodically occurred throughout the summer. Water temperatures reached over 82°F during these periods. However, excellent survival of trout occurred in the upper river above Ennis Reservoir where water released by Montana Power Company at Hebgen Dam maintained a respectable river flow throughout the summer.

RED ROCK RIVER

Lima Reservoir on the Red Rock River above Clark Canyon Reservoir lost practically all stored irrigation water by about June 23 and remained nearly empty throughout the irrigation season. The absence of stored water releases from the reservoir resulted in severe dewatering of the Red Rock River by irrigation diversions. About 8 miles of the Red Rock River between Lima and Dell were dry throughout the summer and other portions of the stream were dry into late October.

CLARK CANYON RESERVOIR

The fishery in Clark Canyon Reservoir suffered from low lake levels following the 1988 irrigation season. Only 75,000 acre-feet of water remained in the reservoir as it entered the 1988/89 winter period. This was only 42% of the normal operating pool level of 178,000 acre-feet. The severe pool reduction had a significant impact on both brown and rainbow trout survival over the winter.

Spring 1989 gill netting data show rainbow trout were reduced 42% and brown trout 50% from 1988 numbers. Between 1985-88 there was a steadily expanding rainbow population, with 6.3 rainbow per net set in 1985 and 17.7 rainbow per net set in 1988. In 1989 there were 10.2 rainbow per net set.

Continued on page 15....

GLASGOW AREA -- Continued from page 7....

FRESNO AND NELSON RESERVOIR

Good water levels in Fresno and Nelson Reservoirs should continue through 1990. Reproduction of walleye and forage fish, (especially yellow perch) was good to excellent in Fresno Reservoir. Walleye and perch reproduction in Nelson Reservoir was improved over previous low water years. Supplemental stocking of walleye fingerlings in these two reservoirs was conducted in 1989 to assist in rebuilding populations reduced by drought in 1988.

BEAR PAW MOUNTAIN TROUT STREAMS

Trout fisheries in streams of the Bear Paw Mountains were affected moderately to severely by the 1988 drought. Numbers of adult rainbow and brook trout in most streams are sufficient to rebuild populations through natural reproduction. The hardest hit streams, Peoples Creek, Little Box Elder Creek, and Clear Creek, received supplemental plants of brook trout in 1989.

BEAR PAW LAKE

Growth rates of trout in Bear Paw Lake have been reduced by a high sucker population. Past efforts at sucker control involved partial draining of the reservoir and chemical treatment. A sucker removal project was initiated in 1989 utilizing traps and electrofishing in lieu of drawdown and chemical rehab. Approximately 12,000 suckers weighing 9,000 pounds were removed. It is hoped that this project will improve growth of cutthroat and rainbow trout and provide quality fishing.

TIGER MUSKIES

Experimental stocking of tiger muskies is continuing at Kuhr Reservoir near Chinook. Survival of the 1988 and 1989 plants was poor but some fish planted in 1987 now exceed 30 inches. It is hoped that a trophy fishery can be provided as this perch/crappie fishery develops.

MISSOURI RIVER PALLID STURGEON STUDY

Three pallid sturgeon were captured in the tailwaters of Fort Peck Dam in March 1989 and mounted with radio transmitters. Two of the sturgeon were tracked downstream until they shed their transmitters in June. The third sturgeon was never located by telemetry. Habitat data was gathered on each sturgeon each time it was located. One sturgeon had moved approximately 100 miles down river, the other about 55 miles, before they shed their transmitters. The third sturgeon was recaptured while gillnetting in the tailrace in August. It also had shed it's transmitter. Apparently the stainless steel wire that was used to attach the transmitter was too rigid, and eventually wore through the scutes (plate-like scales). Another transmitter was attached to the fish using a softer wire. Hopefully, this sturgeon will be located during SCUBA surveys this winter, and we will be able to determine if the softer wire solves the problem, or if transmitters should be implanted. Posters identifying some obvious differences between pallid and shovelnose are being put up along the Missouri and Yellowstone Rivers to alert fishermen to release pallids and report them to the Department.

Fish or cut bait?
Fish or cut bait?
Fish or cut bait?
Fish or cut bait?

How fishermen blow their own minds.

MILES CITY AREA

Although Yellowstone River sauger are much more abundant than walleye, a new state record walleye was caught in 1989 from the Yellowstone near Miles City. The fish weighed 14 pounds, 14 ounces and was caught through the ice.

Tongue River Reservoir near the Wyoming border produced good fishing in 1989. Crappie weighing one pound were common in May and June catches. Thanks to recent fingerling planting, walleye are more abundant than ever at this reservoir, although most are still on the small side.

A commercial paddlefish caviar operation will begin in 1990 at Intake on the Yellowstone River. A new 1989 law requires the Department to choose one non-profit corporation to accept donated paddlefish eggs from anglers. The MDFWP will share in the profits and use the money to benefit area fish populations, fishing access sites and fishermen.■

TIPS FOR THE BEGINNING ICE FISHERMAN

submitted by Jim Heck

1. Always purchase a bright colored fishing vehicle (it's so much easier for the divers to locate it in the spring).
2. Never make your fishing holes larger than your boot size.
3. Always fish with a buddy--in case you fall on your back and can't get up in your ice fishing outfit.
4. If you don't like crowds, it is important to have a good ice fishing dog along. These can be almost any breed as long as they hang out with nearby fishermen and chew up their fish, tangle their lines, run off with mittens and pee in tackle boxes. With a good ice fishing dog you won't even need an auger -- just take over holes abandoned by other nearby fishermen.
5. If the ice is less than 2 inches thick -- don't store your sinkers in your pockets.
6. Always warm up for ice fishing season by squatting for 15 minutes a day. Many beginners fail to train, pull something on their first squat and are out for the season.
7. Remember, ice fishermen thrive on rumors. Use this to your advantage. When you walk into a crowded area on the ice, tell someone how you were just fishing around the point, but didn't have heavy enough line for that area. You should soon have the area to yourself.
8. NOTE: The number of times that you have to go to the bathroom is directly proportional to the number of layers of clothes you are wearing, the distance to shore, and the number of fishermen who move in nearby.
9. Always bring something to hide your fish in. Never leave them laying in plain sight. If anyone asks -- you've been fishing since before dark yesterday and about 8 hours ago you think you had a nibble. This should keep some guy with a Winnebego full of kids from moving in next to you.
10. Always remember to remove your "maggot farm" from the refrigerator during the off-season.

graphics: Vern Craig

ICE FISHING - FROZEN FRUSTRATION

by Wade Fredenberg

With the onset of another winter ice fishing season is upon us and it brings back warm memories. I look back on my ice angling exploits of past winters with a sense of wonder and hope --- I "wonder" why I fared so poorly and I "hope" to heck this year's results are better.

I'm a regular ice fisherman but unlike the real purist, I ice fish mostly out of boredom and as a cure for cabin fever, not because I love the sport itself. I'm one of those Montanans who views winter as a necessary evil. Winter is something God came up with to keep people from flocking to Montana and over-running the state the rest of the year. So, if you're stuck here in the winter, you'd better learn to ice fish. Those are the facts of life.

I was introduced to ice fishing at a very early age. My brother and I would anxiously await the phone call from my Uncle Art that came every year during Christmas vacation. It was a signal that he had forgotten about our on-ice behavior of the previous year and was willing to take us ice fishing again. Off we'd go to a frozen lake somewhere in the Flathead Valley with enough food, presto-logs, and pocket handwarmers to outlast winter itself let alone a few stubborn fish.

We caught a few fish in those days but my most vivid recollections center around our attempts to prove mathematical theories. For example, we proved the theory of probability---- the one that says that if you drill three 10-inch holes in a one thousand acre lake and leave one unattended, a six-year old boy will "probably" step in that hole up to his waist before the day is out. We retested that theory every year, young Einstein's that we were.

As my age reached double digits, I began to take the fishing business much more seriously. This was the ice house stage of my development. Perched on a milk stool in a pitch dark 4 by 6 foot box, I could stare intently down a 10-inch hole in the floor for hours without blinking. The only noise was my brother's gentle snoring as he slept, leaning up against the other corner of the ice house. Whenever a fish swam by, my muscles would tense. As the biggest barracuda I had ever seen turned to take the bait, I would reef on the line and ......jerk the bait right out of the fishes mouth. My anguished scream would awaken my brother just as that same fish deeply inhaled his bait and began to swim away with his bobber. As he landed yet another, he would giggle and mutter something about skill. Lucky for him he was bigger than me.

I guess that explains how my present attitude about ice fishing developed. I no longer fish from an ice house because I can't control my emotions. I no longer stare intently at my bobber, preferring now to just sneak an occasional peek which is a much subtler approach. I don't police my fishing area like I used to, in order to minimize the chances of losing the big one to a clipped line or some other preventable cause. Instead, I consider it a challenge to land a fish amongst the clutter of thermos bottles, tackle boxes, ice auger and other paraphernalia. Never again will I carefully bevel the edge of my hole to ensure a smooth runway for sliding that big one out.

Nope, when I go ice fishing next year I plan to sleep in. I'll drive out to the lake to the spot where everybody else is, drill just one hole and casually drop in my bait. I'll pay very little attention to my bobber but focus heavily on my large lunch and my apricot brandy (replaces the handwarmers of my youth), and just stand around and talk fishin'. At the end of the day, I'll reel up my line, mutter something about rotten luck, and walk away a better man. Deep inside, I'll know that I've finally whipped the frustration that I used to feel when fishing on a frozen lake.■

PERCH FISHING AT CANYON FERRY

FISHERMAN LOG SUMMARIES FOR 1987-88 SEASON

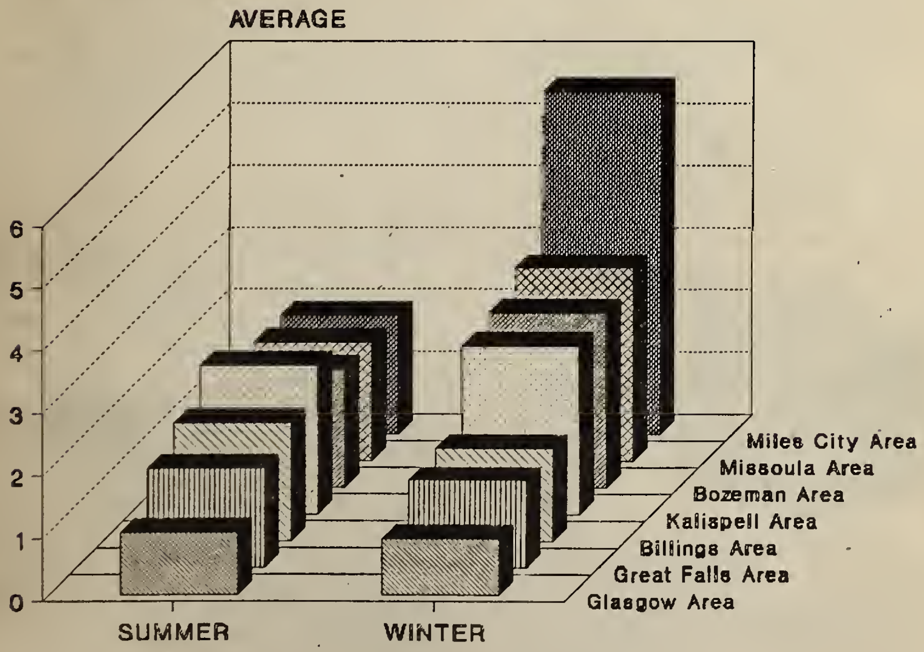
Fishing success summaries for December 1987 through November 1988 are listed below. The number of logholders who turned in their logs decreased to 378 in 1988.

Statewide catch rates in 1988 increased to 2.2 fish per hour for the winter months compared to 1.7 in 1987 and the summer months stayed constant at 1.8 fish per hour.

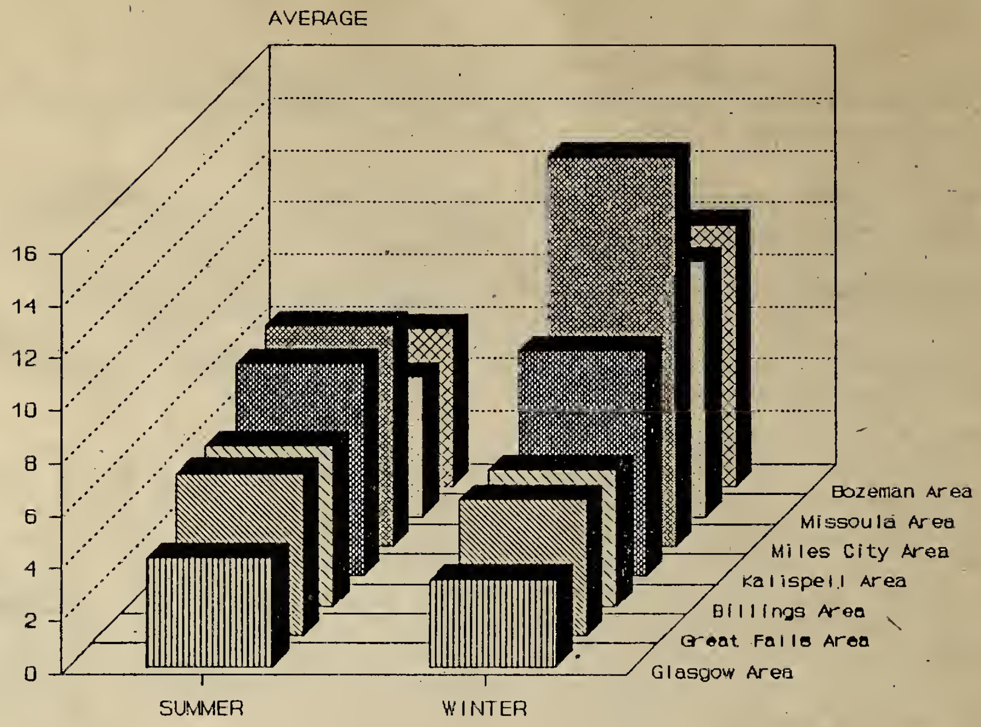
Recruitment of new logholders this year included 121 resident and 8 non-resident anglers.

The Montana Department of Fish, Wildlife and Parks thanks all of you for your continued interest and support in our fisheries program.

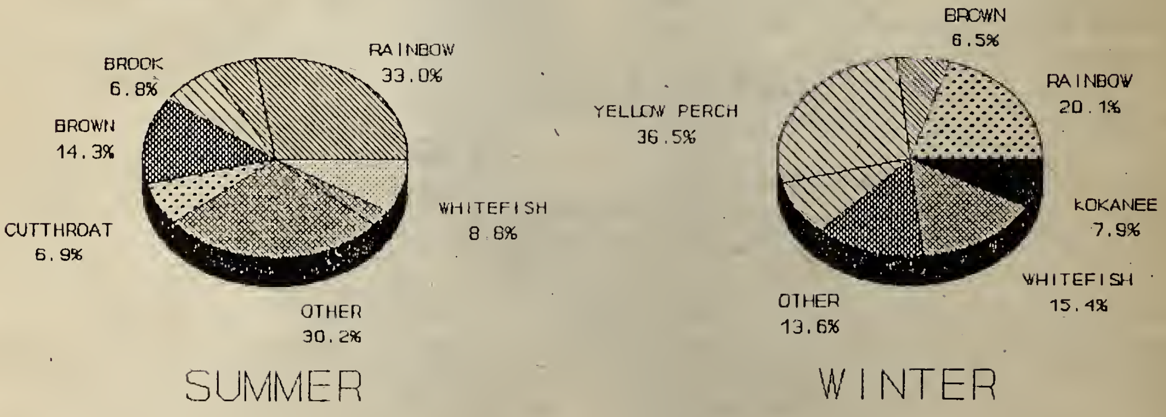
AVERAGE NUMBER OF FISH CAUGHT PER HOUR



AVERAGE NUMBER OF FISH CAUGHT PER DAY



STATEWIDE TOP GAME AND SPORT FISH
DECEMBER 1987 THRU NOVEMBER 1988



DROUGHT - 1988 --- Continued from page 9....

There is concern that the winter of 1989/90 may place additional stress on reservoir trout populations because the fall 1989 reservoir capacity, at about 40,000 acre feet, is 47% lower than it was in the fall of 1988 (75,000 acre-feet) due to lack of carry-over storage from 1988 and the 1989 irrigation demands on the reservoir. Also, because of the low carry-over volume, winter reservoir releases may be even less than the 50 cfs released during the winter of 1988, placing additional stress on trout in the Beaverhead River below the dam. (Winter flow releases for 1989/90 were, in fact, reduced to 35 cfs.)

CANYON FERRY RESERVOIR

Canyon Ferry Reservoir was drawn down substantially, but adverse effects on the fishery due to this condition have not been detected. However, due to very low inflows, the fall run of brown trout out of Canyon Ferry Reservoir into the Missouri River was rather poor during the fall of 1988.

MID-MISSOURI DRAINAGE

(Canyon Ferry Dam to Fort Peck Dam)

Throughout the summer, water released from Canyon Ferry Reservoir maintained about 3,000 cfs in the Missouri River; however, storage was insufficient to supply the 4,100 cfs needed to adequately wet the river's many side channels which are key rearing areas for young fish and spawning areas for brown trout. Young rainbow trout recruits to this reach of the Missouri River will likely be far below normal due to dewatering of the river's few spawning tributaries, notably Sheep and Little Prickly Pear creeks and the Dearborn River. While serious impacts on the Missouri's adult trout population are not anticipated, the potential shortage of young recruits may limit future adult numbers.

On the Smith River, the 66-mile popular floating section beginning at Camp Baker could not be utilized by floaters after July 4, 2-3 weeks earlier than normal. Flows at the USGS gauge at Camp Baker reached a low of 18 cfs in early September.

Fish losses occurred in the trout streams of the Bear Paw Mountains. Loss of forage fish and adult and sub-adult game fish occurred in some tributaries to the Milk and Missouri rivers. The larger irrigation reservoirs, including Fresno and Nelson, were drawn down to the maximum, flushing large numbers of game fish into irrigation canals and ditches. High turbidity, decreased food production, and increased predation in the shrunken reservoir pools further reduced remaining game fish numbers.

Trout in Martinsdale, North Fork Smith River (Sutherlin) and Bair reservoirs were severely reduced by critically low water levels. A serious sediment problem occurred in the North Fork Smith River below North Fork Smith River Reservoir due to the extreme drawdown and wave action on mud flats.

Trout ponds, particularly those northwest of Great Falls, suffered from low water conditions. Many of these ponds were not planted this past spring in anticipation of the drought. Few of the smaller reservoirs and farm ponds experienced summer fish kills but 40-50% of these waters were subject to winter kill due to extremely low water levels at freeze-up.

Brown trout populations in the upper Musselshell River, which have been at reduced levels due to chronic low summer flows, and which were reduced by 50% in 1987 following extreme dewatering, remained at a similar level following the low flows 1988.

YELLOWSTONE RIVER DRAINAGE

The upper Yellowstone River mainstem at Livingston dropped to 639 cfs in January 1988, approaching the all-time record low of 590 cfs reached in January 1940. Average annual discharge at this site is 3,728 cfs for a 63-year period of record. Side channels of the upper Yellowstone River - key spawning areas for the river's brown trout - were generally avoided by spawners due to the low flow levels. The 1988 crop of young brown trout may have been significantly reduced. Lower than normal flows in spawning tributaries to the upper Yellowstone River reduced the reproductive success of the river's cutthroat trout population, potentially reducing the number of adult cutthroat in future years. Portions of most of these streams dry up every year, but in 1988 they dried up earlier than normal.

The Boulder and Shields rivers were, in general, also severely dewatered. Trout populations will likely suffer from these conditions, but no data is currently available.

Flows in the mid and lower Yellowstone River reached the lowest levels of record as recorded by the USGS over a period of 50 years or more. A number of tributary streams, including the Clarks Fork and Rock Creek, all suffered severe dewatering. Portions of the Stillwater River were similarly affected. Specific impacts on the fisheries in these streams is currently unknown.

The Bighorn River maintained good trout survival due to releases from Yellowtail Dam. However, colder than normal water releases occurred -- an anomaly associated with below normal reservoir inflows -- which stunted trout growth, reducing the overall size of the trout in the Bighorn River fishery.■

1988 LIST OF MONTANA'S RECORD FISH

Species	Weight		Angler	Year	Location
	lbs.	ozs.			
Arctic grayling	2	10½	Steve Houser	1986	Hyalite Reservoir
Bigmouth buffalo	32	6	Gary Lundman	1979	Missouri River (Slippery Ann Game Station)
Black bullhead	1	11	Mike Mitchell	1977	Horse Creek (McCone Co.)
Black crappie	3	2	Al Elser	1973	Tongue River Reservoir
Blue sucker	7	4	Dudley L. Thiel	1986	Yellowstone River (near Sidney)
Bluegill	2.64		Brent Fladmo	1983	Peterson's Stock Dam
Brook trout	9	1	John R. Cook	1940	Lower Two Medicine Lake
Brown trout	29	0	E.H. "Peck" Bacon	1966	Wade Lake
Bull trout	25	10	James Hyer	1916	unknown
Burbot (ling)	13	4	Paul Keller, Ernie Schutt	1980	Missouri River (below Fort Peck Dam)
Carp	38	8	Don Bagley	1986	Eyraud Lakes
Channel catfish**	**25.89**		Gordon Wentworth, **Tom Hilderman (tie)**	1984 **1988**	**Fort Peck Reservoir**
Chinook (king salmon)	7	11	Joyce Good	1987	McGuire Creek
Cisco***	**1.28**		**Larry Garrow**	**1988**	**Fort Peck Reservoir**
Coho salmon	4	14	Irven Stohl	1973	Fort Peck Reservoir
Cutthroat trout	16	0	William D. Sands	1955	Red Eagle Lake
Freshwater drum*	**20**	**7**	**Richard C. Lee**	**1987**	**Fort Peck Reservoir**
Golden trout**	**4**	**1**	**Jack T. Robertson**	**1988**	**Lightning Lake**
Goldeye	2	9	Lester Estenson	1977	Nelson Reservoir
Kokanee (salmon)	5	15	Forrest Johnson	1976	Pishkun Reservoir
Lake trout	42	0	Dave Larson	1979	Flathead Lake (east shore)
Lake whitefish	10	0	Ruby Mutch	1986	Lower St. Mary Lake
Largemouth bass	8	2½	Juanita A. Fanning	1984	Milnor Lake
Longnose sucker**	**3.27**		**Ray Quigley**	**1988**	**Marias River**
Mountain whitefish	5	1½	Mervin "Frog" Fenimore	1987	Kootenai River
Northern pike	37	8	Lance Moyler	1972	Tongue River Reservoir
Northern squawfish	7.25		Loyal Herreid	1987	Lower Flathead River
Paddlefish	142	8	Larry Branstetter	1973	Missouri River
Pallid sturgeon	60	0	Gene Sattler	1979	Yellowstone River
Pumpkinseed	0.95		Tim Colver	1985	Milnor Lake
Pygmy whitefish	0.16		Orlin Iverson	1982	Ashley Lake
Rainbow trout	20	0	C.J. Brohaugh	1952	Cliff Lake
Rainbow-cutthroat hybrid	30	4	Pat Kelly	1982	Ashley Lake
Sauger	7	2	Raymond V. Johnston	1975	Tongue River Reservoir
Shorthead redhorse sucker	4.68		Ray Quigley	1985	Marias River near Loma
Shortnose gar	3	1	John Johnson	1977	Fort Peck dredge cuts
Shovelnose sturgeon	13.72		Sidney L. Storm	1986	Missouri River
Smallmouth bass	5.11		Marvin Loomis	1987	Fort Peck Reservoir
Smallmouth buffalo	9	4	Mac McKinney	1977	Hauser Lake (west side)
Stonecat	0.42		Robert M. Garwood	1985	Milk River at Havre
Utah chub	1.43		M. Steve Kovatch	1986	Canyon Ferry Reservoir
Walleye	14	0	Neil Berg, Jim Carver (tie)	1974 1983	Nelson Reservoir
White bass	1	2	Ludwig Dubbe	1986	Fort Peck dredge cuts
White crappie	2	2	Drew Jackson	1978	Tongue River Reservoir
White sturgeon	96	0	Herb Stout	1968	Kootenai River
White sucker	5	5⅓	Fred Perry	1983	Nelson Reservoir
Yellow bullhead	0.72		Wade Fredenberg	1987	Yellowstone River
Yellow perch**	**2.37**		**Vernon Schmid**	**1988**	**Ashley Lake**

* New Montana record for 1987
** New Montana record or tie for 1988
*** New to Montana's record list